

THE LIFE HISTORY OF A SEMI-ARID POPULATION OF *CROITANA CROITES* (HEWITSON), (LEPIDOPTERA: HESPERIIDAE: TRAPEZITINAE)

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Abstract

The life history of *Croitana croites* (Hewitson) from the eastern goldfields of Western Australia is described and the immature stages figured.

The genus *Croitana* Waterhouse contains one described species from Western Australia and two species from the southern part of the Northern Territory (Common and Waterhouse 1981). The Western Australian species (*Croitana croites* (Hewitson)) is a polytypic species (Key 1970) with three separate populations each morphologically distinct. One population occurs in southern coastal areas (Perth to Bunbury), and a second is found in the northern coastal and near-coastal areas (Murchison district to Dongara) (Hay pers. comm.). A third, also referred to *C. croites*, has been located from just south of Menzies to just south of Kalgoorlie, thus extending the published, coastal, distribution for this species of Carnarvon to Bunbury (Common and Waterhouse 1981) some 600 km inland. *C. croites* has been found in three locations: (i) Lake Douglas, (ii) Mt Hunt and (iii) Deadman's Soak in the eastern goldfields area. The Lake Douglas location is, in fact, a ridge of hills running from Seven-mile Hill, 10 km west 40° south, to Lake Douglas, 12 km west 55° south, of Kalgoorlie. Adults have been observed flying annually since September 1985, from mid-September until early November. The Mt Hunt location is 13 km south of Kalgoorlie. Sightings were first made in October 1986. Deadman's Soak, where first sightings were made in September 1987, is on the edge of the Goongarrie National Park some 50 km southwest of Menzies and about 130 km north of Kalgoorlie.

The Kalgoorlie population is similar to but generally paler and slightly smaller than the Murchison to Dongara population. It differs greatly from the Perth to Bunbury population which is much larger, more strongly marked and overall orange and brown in colour. The distinguishing features for the three populations are given in Table 1.

Although many males and a few females had been observed at the 7-mile Hill to Lake Douglas location during 1985 and 1986, it was not until August 1987 that several larvae were located. During September, October and early November more larvae, six pupae and twenty-three eggs were found.

The eggs were generally found singly on the upper surface of the food plant leaf, close to the stem. Only on two occasions were eggs found in pairs. The larvae were found in shelters made in one of two ways (i) the folding of a single leaf transversely and (ii) the joining of two leaves to form a downward-opening tube (Fig. 6). The various instars made shelters differing only in size. Larvae were observed feeding during late afternoon and early morning. The presence of larvae was indicated by 'wedge'-shaped damage to the leaves.

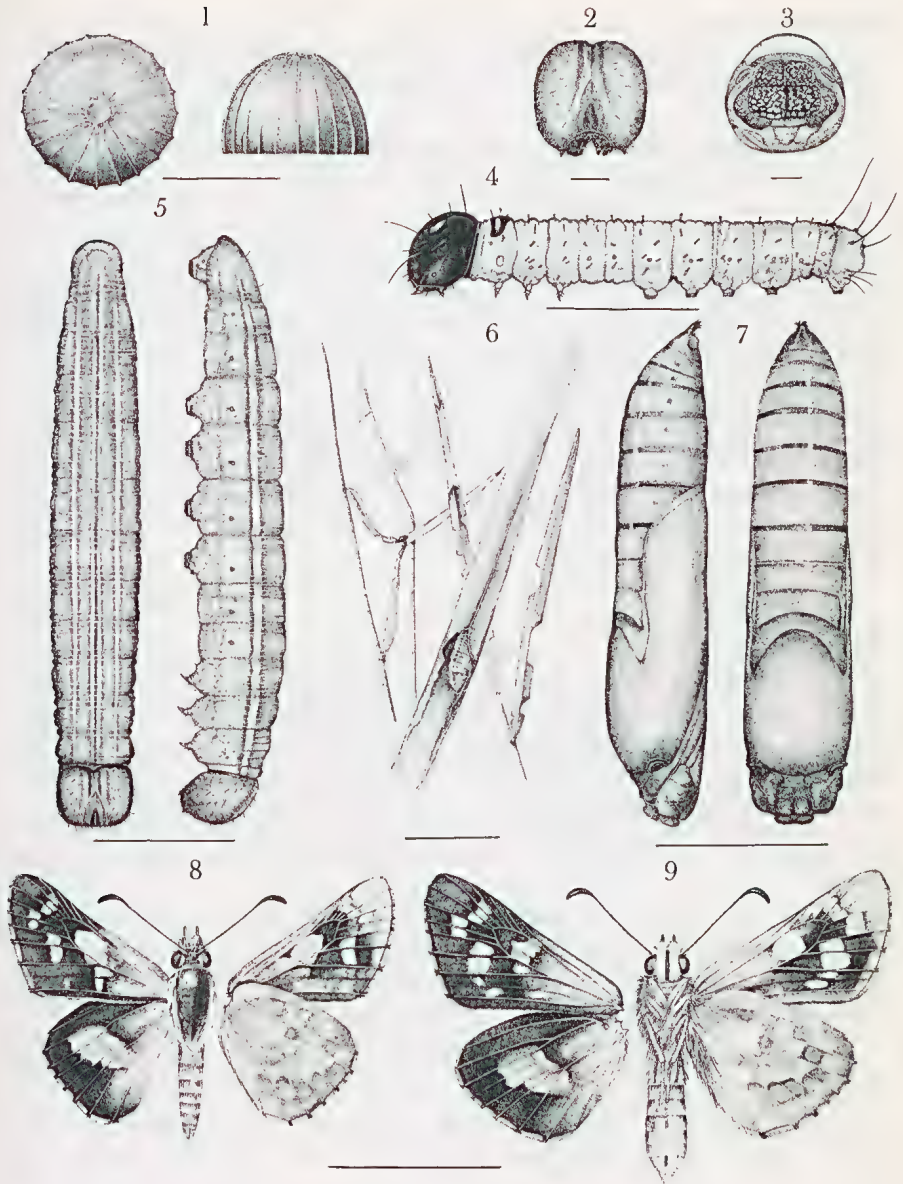
The life history of this species is similar to that of *C. arenaria* Edwards as described by Atkins and Miller (1987).

Life history

Foodplant. *Stipa platychaeta* Hughes (Poaceae). *Egg* (Fig. 1). Diameter 1.5 mm, height 0.75 mm; yellow when found, dome shaped with 21 ribs;

Table 1. Morphological differences in the three populations of *Croitana croites* from Western Australia.

Distinguishing features	Population		
	Kalgoorlie	Northern	Southern
A. Upper fore wing spots			
(1) male subbasal area	yellow	pale orange	orange
(2) male postmedian area	yellow	pale orange	orange
(3) female subcostal median area	orange distinct from (4)	orange merged with (4)	orange merged with (4)
(4) female submedian area near A1+A2	orange	orange	orange
(5) female other spots	yellow	yellow	orange
B. Underside			
(6) fore wing apical area and hind wing	grey	greyish-yellow	yellow
(7) hind wing spots	grey-brown often merged to termen	dark grey-brown distinct	orange-brown distinct
C. Size			
(8) wingspan (cm)	2.4-3.0	2.7-3.4	3.2-3.8



Figs 1-9. Life history of *Croitana croites* (Hewitson): (1) egg; (2) final instar larval head; (3) pupal head; (4) first instar larva; (5) final instar larva; (6) first, second and final instar larval shelters; (7) pupa; (8) adult male, upperside and underside; (9) adult female, upperside and underside; Scale-bars (1), (2), (3), (4) = 1 mm.; (5), (7) = 5 mm.; (6), (8), (9) = 10 mm.

small depression on apex.

Larva (Figs. 2, 4, 5). *5th instar*: head, pale orange, width 2 mm, faintly granulated; medial longitudinal groove dark brown; margins brown; short orange hairs: body, general colour pale green or brown; dark dorsal line with pale margins, two cream dorso-lateral lines with darker lower edge; anal segment and underside grey; anal segment with black dots; length 20 mm extending to 25 mm. *2nd-4th instars*: similar to 5th instar but body colour pale yellow almost white. *1st instar*: head black, prothoracic plate dark brown, body colour pale yellow almost white, length 3 mm.

Pupa (Figs 3, 7). Length 17 mm, width 3 mm: body orange almost devoid of markings, spiracles orange; head dark brown, head-cap granular black; cremastral hooks orange. Cremaster brown. Pupal duration 14-16 days.

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